

We Claim

1. An inflator comprising:
  - a housing connected on one end by a first endcap and connected on an opposite end by a second endcap;
  - a first igniter having ignition material that burns upon actuation of the first igniter by an electrical signal;
  - a first autoignition material being in intimate contact with the first igniter whereby the first autoignition material is ignited from the burning of the ignition material of the first igniter; and
  - a first gas generant for producing inflation gas for inflating an airbag, whereby the burning of the autoignition material burns the first gas generant, the first gas generant is separated from direct contact with the first endcap, the second endcap, and the housing.
2. The inflator according to claim 1 further comprising a first enhancer for igniting the first gas generant, wherein the burning of the first autoignition material ignites the first enhancer.
3. The inflator according to claim 2 wherein the enhancer is separated from direct contact with the first endcap, the second endcap, and the housing.
4. The inflator according to claim 3 further comprising a first enhancer retainer for retaining the first enhancer, the first enhancer retainer comprises an annular mounting portion arranged substantially parallel with the first endcap, wherein a connection portion connects the enhancer cup to the mounting portion, the connection portion has a plurality of first enhancer retainer holes for passage of hot gas from first enhancer to the first gas generant.

5. The inflator according to claim 1 further comprising a focuser for reducing the quantity of first gas generant in contact with an inner surface of the filter.

6. The inflator according to claim 1 further comprising a second igniter and a second autoignition material, wherein burning of the second igniter ignites the second autoignition material.

7. The inflator according to claim 6 further comprising a second enhancer and a second gas generant, wherein the burning of the second autoignition material ignites the second enhancer, the burning of the second enhancer ignites the second gas generant.

8. The inflator according to claim 7 further comprising a second enhancer retainer comprising a tubular portion for receiving the second enhancer, the second enhancer retainer comprises an annular securing portion arranged substantially parallel with the second endcap.

9. The inflator according to claim 8 wherein the second enhancer retainer comprises an intermediary portion connecting the securing portion with the tubular portion, wherein the intermediary portion has a plurality of second enhancer retainer holes for providing a passageway for the hot gas from the second enhancer to reach the second gas generant.

10. An inflator comprising:  
a housing connected on one end by a first endcap and on an opposite end by a second endcap;  
a first enhancer for igniting a first gas generant;  
a second enhancer for igniting a second gas generant; and

an autoignition cartridge comprising pyrotechnic material that ignites at a temperature below the combustion temperature of the first gas generant whereby the burning of the first gas generant ignites the pyrotechnic material of the autoignition cartridge, the burning of the pyrotechnic material of the autoignition cartridge ignites the second enhancer which in turn ignites the second gas generant

11. The inflator according to claim 10 further comprising a second enhancer retainer comprising a tubular portion for receiving the second enhancer, the second enhancer retainer comprises an annular securing portion arranged substantially parallel with the second endcap.

12. The inflator according to claim 11 wherein the second enhancer retainer comprises an intermediary portion connecting the securing portion with the tubular portion, wherein the intermediary portion has a plurality of second enhancer retainer holes for providing a passageway for the hot gas from the second enhancer to reach the second gas generant.

13. The inflator according to claim 12 wherein the second gas generant is in closer proximity to the second endcap than the second enhancer.

14. The inflator according to claim 13 further comprising a divider for separating the second gas generant and the second enhancer from the first gas generant, wherein the autoignition cartridge is situated between the divider on one side and the second enhancer on the other side.

15. The inflator according to claim 13 wherein further comprising a diffuser cap with diffuser cap apertures arranged around the circumference thereof, wherein hot gas from the burning of the second gas generant pass

through the diffuser cap apertures and then through a filter, wherein the filter also filters hot gas from the burning of the first gas generant.

16. The inflator according to claim 13 further comprising a spring for reducing rattling of the first gas generant and for maintaining a predetermined distance between the diffuser cap and the first gas generant.